



## Hearing Conservation Program

### GENERAL

The UNCW Environmental Health & Safety Department (EH&S) is authorized by [UNCW Policy 05.600](#) to develop and manage comprehensive environmental, health and safety programs. Additionally, they are tasked to identify and address regulatory requirements. In that spirit, this Hearing Conservation Program has been developed to protect employees by ensuring that all employees understand Hearing Conservation and safe practices associated with Hearing Conservation before employees perform servicing and maintenance activities. This policy is intended to meet the Occupational Safety and Health Requirements for General Industry outlined in 29 CFR 1910.95.

([http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=9735](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9735))

### SCOPE

This policy applies to all university employees regardless of status or type of employment. It may be used as minimum guidelines for contractors and/or vendors that are expected to maintain their own safety program.

### APPLICATION

This written policy outlines responsibilities, training, specific requirements and documentation with regard to Hearing Conservation.

### RESPONSIBILITIES

Each department shall be responsible for the implementation of the Hearing Conservation procedures. Employees shall have training in understanding the significance of implementing the procedures. Employees will use the Hearing Conservation procedures when performing tasks or duties where the noise levels exceed the OSHA Permissible Limit of 90 dB(A). The use of hearing protection devices is encouraged for all personnel working at tasks or duties where the noise level exceeds the Action Level.

### TRAINING

All participants in the Hearing Conservation Program will receive training in hearing conservation. The training program shall be presented annually.

Training shall include:

1. The effects of noise on hearing
2. The purpose of hearing protectors
3. The advantages, disadvantages and attenuation of various types, and instruction on selection, fitting, use and care.

4. The purpose of audiometric testing and an explanation of the test procedures and typical findings
5. The University's policy on wearing protective devices will be explained.

### **SPECIFIC REQUIREMENTS**

All personnel who perform jobs where the noise exposure exceeds the Action Level will be included in the UNCW Hearing Conservation Program. Use of hearing protection is required when performing tasks or duties where the noise levels exceed the OSHA Permissible Limit of 90 dB(A). The use of hearing protection devices is encouraged for all personnel working at tasks or duties where the noise level exceeds the Action Level. All personnel who are included in the Hearing Conservation Program will be required to have an annual audiometric test and to receive annual training in hearing conservation. All employees who exhibit a Standard Threshold Shift (STS), as defined by OSHA, or other changes in their audiogram as specified by the attending audiologist will receive appropriate follow-up care and retraining

### **Procedural Requirements**

#### **Noise Exposure Assessment**

1. The UNCW EH&S department will conduct initial noise assessments to identify personnel who may be exposed to eight hour Time Weighted Average (TWA) noise levels at or above the Action Level (AL), as specified by OSHA. The AL will be adjusted for extended shifts as shown below:

<i>Shift Duration (hrs.)</i>	<i>Action Level, dB(A)</i>
8	85
9	84
10	83
12	82

2. Surveys shall be conducted using instruments that meet at least American National Standards Institute (ANSI) Type 2 specifications. Instruments will be calibrated before and after each survey. Surveys and measurements shall be conducted in accordance with current OSHA requirements and standards of professional practice.

3. The initial survey shall include measurements of sound levels at all normal work locations, during noise generating tasks and activities, using a hand held sound level meter. Personal sampling with a noise dosimeter may be performed where warranted to accurately describe the 8-hour TWA noise exposure levels.
4. Follow-up surveys shall be made whenever engineering, production or administrative modifications are made that may expose additional employees at or above the AL or may render inadequate the attenuation provided by hearing protectors being used by employees. Follow-up surveys should be made no greater than every three years.
5. All sound levels between 80 and 130 dBA will be integrated into the noise measurements. If significant impact or impulse noise components are present, an appropriate dosimeter will be used to obtain the measurements.
6. Affected personnel will be notified, in writing, of the results of the monitoring. This may be accomplished by posting a table listing job descriptions, and the associated 8 Hour TWA or other methods.
7. The results of all noise surveys will be documented and maintained on file in the UNCW EH&S department.

#### **Engineering and Administrative Controls**

1. UNCW recognizes the requirement to control existing noise exposure levels by engineering and/or administrative controls, as well as the benefits of these controls. Where noise levels exceed 100 dB(A) feasible engineering solutions will be utilized to reduce noise levels to the extent possible.
2. Within the limitation of work schedules and needed skills, feasible administrative controls (changes in work practices, job rotation, etc.) will be considered. The Hearing Conservation Program Administrator shall establish guidelines for administrative and engineering controls where implemented in university operations.

#### **Hearing Protection Devices**

1. The wearing of hearing protectors is required when personnel are exposed to noise levels that exceed the OSHA Permissible Exposure Limit (PEL) of 90 dB(A). Failure to wear hearing protection devices (HPD) as required may result in the disciplinary action for employees or termination of visitor status.
2. The UNCW EH&S department will provide guidance on acceptable HPD for use in university operations. HPD's shall be selected so as to provide acceptable attenuation levels at the ear as specified in 1910.95(i).
3. Each Department shall provide a variety of HPD that provide required attenuation values for personnel in each area where the Hearing Conservation Program is in effect.
4. The issuance of all types of HPD will always be preceded by training and personal supervision in the proper procedures for wearing, caring for and cleaning of the devices issued.

5. Employees are responsible for the care of HPD's issued to them (muffs, fitted plugs, etc.). Disposable HPD's shall be changed on a regular basis (daily) as required based on conditions of use.
6. Published attenuation data for all HPD is based on laboratory test environments and these values are not derived under real-world work conditions. To estimate the real world attenuation value when meeting the attenuation requirements of 1910.95(j), the attenuation shall be calculated as described in 1910.95, Appendix B and then a safety factor of 50% applied (divide the calculated attenuation value by 2 to determine a real world estimate of actual attenuation value).

### **Audiometric Testing**

1. All participants in the Hearing Conservation program will be given an initial audiometric examination to establish baseline hearing threshold levels as part of the initial employment physical examination, or when first assigned to duties covered by the Hearing Conservation Policy.
2. All participants in the Hearing Conservation Program will continue to receive annual audiometric examinations until removed from the program.
3. The audiometric examinations will be provided as directed by the Hearing Conservation Program Administrator, in accord with **requirements** contained in 1910.95(f).
4. The audiometric testing program will be under the supervision of a licensed audiologist, otolaryngologist or physician.
5. For each audiogram a comparison with the baseline audiogram shall be made to determine if a Standard Threshold Shift (STS, as defined by OSHA) exists. If an STS is identified it shall be referred to the audiologist for a work relatedness determination. A written report shall be obtained from the audiologist for each STS determination conducted. Medical or audiology referral for problem audiograms will be made as determined by the supervising audiologist.
6. Any individual who has been determined to have a work related STS shall be provided appropriate follow up actions as prescribed in 1910.95(g)(8).
7. A written report of the audiometric test and the work relatedness determination shall be provided, in writing, to the individual tested, within twenty one days of receipt of the report by the UNCW EH&S department or Department Manager.
8. Audiograms are protected medical records and the data shall be maintained in a confidential manner as prescribed by HIPPA and other medical record requirements.

## **DOCUMENTATION**

1. A copy of all noise exposure assessments conducted in university operations shall be maintained by the UNCW EH&S department.
2. A copy of each audiometric test report, and Work Relatedness Determination, if any, shall be maintained in the individual's confidential medical file maintained by their department.
3. The contractor conducting the audiometric tests shall maintain all documentation required. Written documentation of the required information shall be made available by the contractor as requested by the UNCW EH&S department.
4. All records shall be maintained and made available as required by 1910.1020.
5. The written Hearing Conservation Program shall be maintained by the Hearing Conservation Program Administrator. It shall be revised as required to reflect current University practices and procedures in hearing conservation.

Appendix A

## Hearing Conservation Program Fact Sheet Aquarius Reef Base

### GENERAL

Where engineering and administrative controls are not successful in lowering noise exposure, hearing protection devices must be used. OSHA requires that employees be offered a variety of hearing protection devices, including ear muffs and ear plugs, at no charge to the employee. If you suspect that you may be over exposed to noise contact the Environmental Health & Safety Department at 910-962-3057. Noise exposure may be continuous, intermittent or impulsive.

### AREAS OF CONCERN

The Environmental Health and Safety Department (EH&S) has identified several areas of concern at the Aquarius Reef Base, Life Support Buoy (LSB) and Habitat that require hearing protection devices. While these areas have been identified, there may be others that have yet to be identified. Employees working around compressors or in the LSB shall wear proper hearing protection devices.

### NOISE EXPOSURE ASSESSMENT

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### TYPES OF HEARING PROTECTION DEVICES

There's a wide variety of types of hearing protectors available, including ear muffs, foam and preformed ear plugs, and canal caps. Selection is based upon several factors, as described below.

- **Ear Muffs** - These devices fit against the head and enclose the entire external ears. The inside of the muff cup is lined with acoustic foam which can reduce noise by as much as 15 to 30 decibels.

Ear muffs are often used in conjunction with ear plugs to protect the employee from extremely loud noises, usually at or above 105 decibels.

- **Ear Plugs** - Preformed ear plugs come in different sizes to fit different sizes of ear canals. Formable or foam ear plugs, if placed in the ear correctly, will expand to fill the ear canal and seal against the walls. This allows foam ear plugs to fit ear canals of different sizes.

## CHOOSING HEARING PROTECTION DEVICES

Choosing the right hearing protector depends upon several factors:

- **Good seal**: sound reduction is dependent upon blocking any air leakage which will allow sound to bypass the hearing protector and enter the ear. For this reason, the hearing protector must fit properly whether over the ear or in the ear.
- **Comfort**: Both comfort and conveniences are important if the device is to be used consistently. The ease of placing and removing the device, as well as environmental factors such as the presence of dirt or chemicals must be considered.
- **Communication**: Hearing protectors often make communication difficult by reducing and distorting sounds. Employees who are hearing-impaired who must receive detailed face to face instruction may prefer ear muffs so that they can lift up the muffs to hear speech.

## CORRECTLY FITTING THE DEVICES

Ear Plugs - Refer to the diagram for correct insertion of ear plugs. Remember to use the opposite hand to open the ear canal. This is done by grasping the top of the ear and gently pulling upwards. The plug, having been compressed, is placed into the ear canal and held in place for about 10 seconds to allow for expansion of the ear plug.

Ear Muffs - The ear muff cushion must form a seal against the head all around the ear and not rest against any part of the outer ear.

## MAINTAINING A HEARING PROTECTION DEVICE

Ear plugs must be replaced on a daily basis or whenever they become soiled. Using an unclean ear plug may lead to an ear infection. Employees should be issued their own ear muffs, however, if ear muffs are used by more than one employee, the ear muffs should be cleaned frequently. Ear muffs should be wiped off with soap and water. Ear muffs should be inspected regularly for signs of wear and tear, and should defects appear, the device should be replaced.